

CAROLINA DANIA

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EMPLOYEMENT

Software Developer. Booking.com, Netherlands **Jan 2017 - Present**

- Development, performance, scaling, and A/B testing of the website booking.com.

Software Engineer. Grupo CIMD, Spain **Jul 2016 - Nov 2016**

- Developing internal applications demanded by the business areas in different activities related primarily to interest income (Front/Middle/Back-Office) and customer management systems and operations.

Software Engineer. INDRA, Spain **Oct 2015 - Jun 2016**

- **DigitalOnboarding** solution for bank accounts from DNI, NIE and conventional and electronic passports using OCR and facial biometrics. The app was developed using Objective-C and C++.

Ph.D. Research Fellow. IMDEA Software Institute, Spain **May 2010 - Sep 2015**

- **MySQL4OCL** implements a mapping from OCL (Object Constraint Language) into MySQL. This tool is a compiler from OCL to MySQL that allows the automatic evaluation of OCL expressions on relational databases.

- **OCL2FOL**, **OCL2FOL⁺**, **OCL2MSFOL** implements OCL translation mappings into SMT solvers, while mapping from OCL into first order logic. Those mapping allows us to reason on UML models with OCL expressions and check satisfaction of them.

- **TracesAnalyzer** implements a methodology for the analysis of ActionGUI models. This tool allows us to reason on GUI models and check properties over sequence of actions.

These tools were developed using Java. <http://software.imdea.org/~dania/tools/tools.html>

Research Guest. ETH Zurich, Switzerland **Sep 2012 - Feb 2013**

Worked on the definition of the semantics of ActionGUI.

Research Intern. IMDEA Software Institute, Spain **Sep 2009 - Mar 2010**

Developed a module to generate web applications (in PHP) from data, security and GUI models.

SysAdmin. UNC, Argentina **Jun 2005 - Aug 2009**

Adquered experience on managing server infrastructures across multiple platforms (Unix, Linux, Windows), being able to effectively plan, install, configure and optimize IT infrastructures to achieve high availability and performance.

Teacher Assistant. FaMAF, UNC, Argentina **Feb 2007 - Aug 2009**

Tutoring in the following courses of the Computer Science Curricula: Operation System, Computing Networks, Software Engineering I and Software Engineering II, and Introductory Mathematics.

EDUCATION

Ph.D. in Computer Science. Universidad Complutense de Madrid, Spain **Sep 2011 - Jun 2017**

Thesis: Mapping OCL as a Query and Constraint Language.

Master in Computer Science. UCM, Spain **Sep 2010 - Sep 2011**

Thesis: MySQL4OCL: A compiler from OCL to MySQL.

Graduate Coursework: Reactive Systems, Formal Methods, Testing, Fuzzy Logic, and Embedded Systems.

Degree in Computer Science. FaMAF, UNC, Argentina **Mar 2002 - Dec 2008**

Thesis: Analysis of Refinements Between Modal Transitions System Based on SAT.

PROGRAMMING LANGUAGES AND TECHNOLOGIES

Perl, Java, Bash, SQL, and MySQL. (Proficient).

C, Haskell, Python, PHP, HTML, Swift. (Prior Experience).

NetBeans, Maven, XCode, Emacs, Vim, Subversion, and Git.

PUBLICATIONS

- [1] M. EGEE AND C. DANIA, *SQL-PL4OCL: an automatic code generator from OCL to SQL procedural language*, Software & Systems Modeling, (2017)
- [2] C. DANIA AND M. CLAVEL, *OCL2MSFOL: A mapping to many-sorted first-order logic for efficiently checking the satisfiability of OCL constraints*, in Proceedings of the ACM/IEEE 19th International Conference on Model Driven Engineering Languages and Systems, MODELS '16, 2016, pp. 65–75
- [3] C. DANIA AND M. CLAVEL, *Verifying UML/OCL models with OCL2MSFOL. A benchmarking exercise*, in International Conference on Advanced Technology and Sustainable Development (ISA 2016), Ho Chi Minh City, Vietnam, August 22-23, 2016., 2016
- [4] C. DANIA AND M. CLAVEL, *Model-based formal reasoning about data-management applications*, in Fundamental Approaches to Software Engineering - 18th International Conference, FASE 2015, Held as Part of ETAPS 2015, London, England, April 11-18, 2015, 2015, pp. 218–232
- [5] M. A. G. DE DIOS, C. DANIA, AND M. CLAVEL, *Formal reasoning about fine-grained access control policies*, in Eleventh Asia-Pacific Conference on Conceptual Modelling, APCCM 2015, Sydney, Australia, January 27-30, 2015, 2015, pp. 91–100
- [6] D. A. BASIN, M. CLAVEL, M. EGEE, M. A. G. DE DIOS, AND C. DANIA, *A Model-Driven Methodology for Developing Secure Data-Management Applications*, IEEE Trans. Software Eng., 40 (2014), pp. 324–337
- [7] M. ARJONA, C. DANIA, M. EGEE, AND A. MAÑA, *Validation of a security metamodel for the development of cloud applications*, in OCL@MoDELS, A. D. Brucker, C. Dania, G. Georg, and M. Gogolla, eds., vol. 1285 of OCL@MoDELS, CEUR-WS.org, 2014, pp. 33–42
- [8] C. DANIA AND M. CLAVEL, *Modeling Social Networking Privacy*, in 2014 Theoretical Aspects of Software Engineering Conference, TASE 2014, Changsha, China, September 1-3, 2014, IEEE, 2014, pp. 50–57
- [9] A. D. BRUCKER, T. CLARK, C. DANIA, G. GEORG, M. GOGOLLA, F. JOUAULT, E. TENIENTE, AND B. WOLFF, *Panel discussion: Proposals for improving OCL*, in OCL@MoDELS, 2014, pp. 83–99
- [10] M. DIOS, C. DANIA, D. BASIN, AND M. CLAVEL, *Model-Driven Development of a Secure eHealth Application*, in Engineering Secure Future Internet Services and Systems, M. Heisel, W. Joosen, J. Lopez, and F. Martinelli, eds., vol. 8431 of LNCS, Springer International Publishing, 2014, pp. 97–118
- [11] C. DANIA AND M. CLAVEL, *OCL2FOL+: Coping with Undefinedness*, in OCL@MoDELS, J. Cabot, M. Gogolla, I. Ráth, and E. Willink, eds., vol. 1092 of CEUR Workshop Proceedings, 2013, pp. 53–62
- [12] C. DANIA, *Modeling Social Networking Privacy*, CEUR workshop proceedings, 834 (Eindhoven, The Netherlands, 2012)
- [13] D. A. BASIN, M. CLAVEL, M. EGEE, M. A. G. DE DIOS, C. DANIA, G. ORTIZ, AND J. VALDAZO, *Model-Driven Development of Security-Aware GUIs for Data-Centric Applications*, in FOSAD, vol. 6858 of LNCS, Springer, 2011, pp. 101–124
- [14] M. A. G. DE DIOS, C. DANIA, M. SCHLÄPFER, D. A. BASIN, M. CLAVEL, AND M. EGEE, *SSG: A Model-Based Development Environment for Smart, Security-Aware GUIs*, in ICSE (2), J. Kramer, J. Bishop, P. T. Devanbu, and S. Uchitel, eds., ACM, 2010, pp. 311–312
- [15] M. EGEE, C. DANIA, AND M. CLAVEL, *MySQL4OCL: A Stored Procedure-Based MySQL Code Generator for OCL*, ECEASST, 36 (2010)

DISERTATIONS

OCL2MSFOL: A Mapping to Many-Sorted FOL for Efficiently Checking the Satisfiability of OCL Constraints.
- MoDELS 16, Saint Malo, France. Oct 5, 2016

Analyzing ActionGUI models.

- FASE 15, Held of ETAPS. London, UK. Apr 14, 2015.

- Seminars. IMDEA Software Institute. Madrid, Spain. Sep 23, 2014.

- Saarland University. Saarbrücken, Germany. Jul 16, 2014.

- FaMAF, UNC, Córdoba, Argentina. Apr 19, 2013.
- NESSoS European project meeting. Paris, France. Feb 26, 2013.
- ETH Zurich, Switzerland. Oct 26, 2012.
- NESSoS European project meeting. Zurich, Switzerland. Jun 5, 2012.

Modeling Social Networking Privacy.

- TASE 15. Changsha, China. Sep 1, 2014.
- ESSoS Doctoral Symposium. Eindhoven, The Netherlands. Feb 12, 2012.

OCL2FOL+: Coping with Undefinedness.

- Workshop on OCL, Model Constraint and Query Languages (OCL 13). Miami, USA. Sep 30, 2013.
- NESSoS European project meeting. Bertinoro, Italy. Sep 4, 2013.

OCL2FOL: Using SMT solvers to automatically reason on conceptual schemata with OCL constraints.

- Dagstuhl Seminar 13211 "Automated Reasoning on Conceptual Schemas". Dagstuhl, Germany. May 20, 2013.

MySQL4OCL: A Stored Procedure-Based MySQL Code Generator for OCL.

- Seminars. IMDEA Software Institute. Madrid, Spain. Nov 2, 2010.

ORGANIZATION OF SCIENTIFICS EVENTS

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| 14th Workshop on OCL and Textual Modeling: Applications and Case Studies (OCL 14)
Co-organizer. Valencia, Spain. | Sep 30, 2014. |
| Intl. Symp. on Engineering Secure Software and Systems (ESSoS 11) | Feb 9-10, 2011 |
| 37th Symp. on Principles of Programming Languages (POPL 10)
Assistant. Madrid, Spain. | Jan 17-23, 2010 |

COURSES, WORKSHOPS, AND CONFERENCES

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| 19th Intl. Conf. on Model Driven Engineering Languages and Systems (MODELS 16).
Saint Malo, France. | Oct 2-7, 2016 |
| 16th Intl. Workshop on OCL and Textual Modelling (OCL 16). Saint Malo, France. | Oct 2, 2016 |
| South Summit 2015. Madrid, Spain. | Oct 7-9, 2015 |
| SAT/SMT Summer School 2015. Stanford, CA, USA. | Jul 15-17, 2015 |
| 18th Intl. Fundamental Approaches of Software Engineering (FASE 15).
Held as Part of the ETAPS. London, UK. | Apr 14-16, 2015 |
| 2nd Microsoft Research & IMDEA Software Institute Collaboration Workshop. Madrid, Spain. | Apr 9-10, 2015 |
| Symp. on Theoretical Aspects of Software Engineering (TASE 14). Changsha, China. | Sep 1-3, 2014 |
| SAT/SMT Summer School 2014. Semmering, Viena. | Jul 10-12, 2014 |
| 1st Microsoft Research & IMDEA Software Institute Collaboration Workshop. Madrid, Spain. | Apr 2-4, 2014 |
| Workshop on Software Correctness and Reliability. ETH Zurich, Zurich, Switzerland. | Oct 4-5, 2013 |
| 13th Intl. Workshop on OCL, Model Constraint and Query Languages (OCL 13). Miami, USA. | Sep 30, 2013 |
| Mini-Workshop on Mobile Devices Security and Privacy. Bertinoro, Italy. | Sep 5, 2013 |
| SAT/SMT Summer School 2013. Espoo, Finland. | Jul 3-5, 2013 |
| Spring Ph.D. School on Trustworthy & Secure Service Composition. Málaga, Spain. | May 27-31, 2013 |
| Dagstuhl Seminar: Automated Reasoning on Conceptual Schemas. Germany. | May 19-24, 2013 |
| SAT/SMT Summer School 2012. Trento, Italy. | Jun 12-15, 2012 |
| 11th Intl. School on Foundations of Security Analysis and Design (FOSAD 11).
Bertinoro, Italy. | Aug 29-Sep 3, 2011 |

Intl. Symp. on Engineering Secure Software and Systems (ESSOS 11). Madrid, Spain.	Feb 9-10, 2011
13th Intl. Conf. on Model Driven Engineering Languages and Systems (MODELS 10). Oslo, Norway.	Oct 3-8, 2010
10th Intl. Workshop on OCL and Textual Modelling (OCL 10). Oslo, Norway.	Oct 3, 2010
Intl. Symp. on Engineering Secure Software and Systems (ESSOS 10). Pisa, Italy.	Feb 3-4, 2010
37th Symp. on Principles of Programming Languages (POPL 10). Madrid, Spain.	Jan 17-23, 2010
Lógica y Demostración Automática. Córdoba, Argentina. <i>Postgraduate course. Lecturer: Carlos Areces (INRIA)</i>	Dec 3-6, 2008
7ma Jornadas Regionales de Software Libre. Córdoba, Argentina.	Aug. 7-11, 2007